

### **CLAIMS**

The following listing of claims lists all of the pending claims, and supersedes all prior listings, and versions, of claims in this application.

#### **LISTING OF CLAIMS:**

1. (Currently Amended) A method comprising:

receiving, from a customer premises terminal via a local link to a line unit ~~and telephone network switch~~ in a switched telephone network, a request for a communication path to a destination;

establishing a communication path from said local link through a concentrator network in said line unit;

controlling a scanning device to selectively connect ~~a signal detector to the local link a~~ detector to said local link, wherein the scanning device and detector are associated with said line unit;

using said detector to identify a data sequence generated by said terminal;

using the signal detector to monitor a signal that includes said request;

determining based on said data sequence ~~said signal~~ that said request does not seek conversion in said line unit; and

responsive to said determination, connecting said terminal communication path from said concentrator network through a portion of said line unit around a converter in said line unit to a wide band data switch connected to a data network.

2. (Canceled)

3. (Currently Amended) A method according to claim 12, wherein said converter comprises a CODEC.

4. (Currently Amended) A method according to claim 12, wherein said concentrator network includes a switching system.

5. (Original) A method according to claim 4, wherein said switching system provides hard wired switching.

6. (Currently Amended) A method according to claim 45, wherein the switching in said switching system provides hard wired switching between said terminal and said wide band data switch.

7. (Currently Amended) A method according to claim 45, wherein said switching system is connected to a digital signal processor (DSP).

8. (Currently Amended) A method according to claim 45, wherein said switching system comprises gated-diode cross point (ODX) switching.

9. (Currently Amended) A method according to claim 45, wherein said switching system comprises cross point switching.

10. (Previously presented) A method according to claim 7, wherein said digital signal processor is indirectly associated with said line unit.

11. (Previously presented) A method according to claim 7, wherein said digital signal processor is directly associated with said wide band data switch.

12. (Original) A method according to claim 7, wherein said digital signal processor (DSP) is integrated with said line unit.

13. (Canceled)

14. (Currently Amended) A method according to claim 1, further including the steps of: signaling a central processing unit (CPU) controlling ~~said a~~ telephone network switch to effect an entry in a journal of said telephone network switch, and using said entry for billing for the communications path set up in response to said ~~requesting~~ receiving step.

15. (Previously presented) A method according to claim 1, wherein said connecting step through a portion of said line unit around a converter therein to a wide band switch is a virtual hard wired connection.

16. (Currently Amended) A method according to claim 145, wherein said connection to said wide band network is through an Asynchronous Transfer Mode (ATM) edge device.

17. (Original) A method according to claim 1, wherein said line unit comprises a line card.

18. (Currently Amended) A method comprising:  
receiving, from a customer premises terminal via a local link to a line unit ~~and telephone network switch~~ in a switched telephone network, a request for a communication path to a destination;

establishing a communication path from said local link through a concentrator network in said line unit;

controlling a scanning device to selectively connect ~~a signal detector to the local link a~~ detector to said local link, wherein the scanning device and detector are associated with said line unit;

using said detector to identify a data sequence generated by said terminal;  
using the signal detector to monitor a signal that includes said request;  
detecting, based on said signal data sequence, that said request seeks bandwidth in excess of that available through said line unit; and

~~responsive to said detection~~ connecting said ~~terminal~~ communication path from said concentrator network through a portion of said line unit around a converter in said line unit to a wide band data switch connected to a data network.

19-20. (Canceled)

21. (Currently Amended) A method according to claim ~~18~~19, wherein said ~~portion of said line unit comprises a~~ concentrator network of said line unit ~~including~~ includes a switching system.

22. (Currently Amended) A method according to claim ~~21~~19, wherein said switching system provides hard wired switching.

23. (Currently Amended) A method according to claim ~~21~~22, wherein the switching in said switching system provides hard wired switching between said terminal and said wide band data switch.

24. (Currently Amended) A method according to claim ~~21~~23, wherein said switching system is connected to a digital signal processor (DSP).

25. (Previously presented) A method according to claim 24, wherein said digital signal processor is indirectly associated with said line unit.

26. (Currently Amended) A method according to claim ~~24~~23, wherein said digital signal processor is directly associated with said wide band data switch.

27. (Currently Amended) A method comprising:  
~~receiving a signal via a local link from customer premises in a telecommunications network connected by said local link to a program controlled switch in said telecommunications network; wherein the program controlled switch is configured to scan each of a set of local links;~~

receiving, from a customer premises via a local link, a signal at a program controlled switch associated with a line unit in a telecommunications network;

scanning said local link at said switch associated with said line unit to provide monitoring of said signal;

making a determination, via a monitor, regarding a pre-established characteristic of said signal;

responsive to said determination, solid state switching said signal to a digital signal processor and a wide band network edge device.

28. (Original) A method according to claim 27, wherein said solid state switching comprises cross-point switching.

29. (Currently Amended) A method according to claim 28, wherein said cross point switching is performed in said line unit, a line unit in said telecommunications network.

30. (Currently Amended) A method according to claim ~~28~~29, wherein said cross-point switching directs said signal away from a two-way digital/analog converter in said line unit having predetermined narrowband digital bit-rate capabilities.

31. (Currently Amended) A method according to claim ~~27~~30, wherein said wide band network edge device is an Asynchronous Transfer Mode (~~ATM~~ATM) edge device.

32. (Currently Amended) A method according to claim ~~27~~31, wherein said digital signal ~~processing occurs in~~ processor is associated with said edge device.

33. (Currently Amended) A method according to claim 27, wherein said digital signal ~~processing is performed in a processor~~ is separate from said wide band edge device.

34. (Currently Amended) A method according to claim ~~27~~<sup>33</sup>, wherein said digital signal processor is associated with said line unit. ~~wherein the processor performing said digital signal processing is associated with a line unit through a portion of which said signal is conducted.~~

35. (Canceled)

36. (Previously presented) A method according to claim 34, wherein said digital signal processing is performed in an adaptive digital signal processor with a programmed controller providing coding and decoding functions adapted to a particular communication service requested by said signal and the physical level of signal protocol used over said local link from said customer premises.

37-40. (Canceled)

41. (Currently Amended) A line unit for a switched telecommunications network comprising trunked together program controlled switches connected to subscriber premises by local links connected to the line unit, said line unit comprising:

a line concentrator network for connection to a plurality of local links, said concentrator network including switches, and a high bandwidth port;

customer interface hardware;

a converter for converting signals on the plurality of local links to digital signals at a predetermined narrowband bit-rate;

a scanning device that is configured to sequentially connect to at least one of said plurality of local links; and

a monitor in communication with said scanning device, wherein the monitor is configured to, upon detecting for detecting a pre-designated signal on a local link connected within said sequence, one of the plurality of local links and providing generate an output signal to said concentrator network to cause said concentrator network to provide a connection to said port for signals on the one said link.

42. (Currently Amended) A line unit according to claim 41, wherein said concentrator network ~~comprise~~ comprises solid state switches.

43. (Currently Amended) A line unit according to claim 41~~42~~, wherein the concentrator switches create a hard wired connection to said port for ~~the one~~ said link.

44. (Currently Amended) A line unit according to claim 41~~43~~, wherein said line unit delivers said signals on ~~the one~~ said link to said port in unconverted format.

45. (Currently Amended) A line unit according to claim 41, including a digital signal processor with a programmed controller providing coding and decoding functions adapted to a service requested by the detected signal and the physical level protocol used over ~~the one~~ said local link.

46. (Previously presented) A line unit for selective connection of a local link to a digital switch of a telephone network and a broadband data network, the line unit comprising:

a switch for connection to the local link, the switch comprising a first port for a narrowband communication and a second port for connection to the broadband data network;  
the switch further configured for scanning each of a set of local links;  
the switch further comprising a controller for controlling the scanning; and  
a monitor means for detecting a request for a broadband service, the monitor being in selective communication with the controller to monitor at least one of the set of local links and in response controlling the switch to connect the local link to the second port.

47. (Previously presented) A line unit as in claim 46, further comprising a channel circuit, coupled to the first port, for channeling signals for communication via the local link and a predetermined digital rate channel corresponding to the narrowband communication.

48. (Previously presented) A line unit comprising:

a switch for connection to a first local link, the switch comprising a first port for a narrowband communication and a second port for connection to the broadband data network;

a channel circuit, coupled to the first port, for channeling signals for communication via the first local link and a predetermined digital rate channel corresponding to the narrowband communication; and

a monitor including a scan point switch matrix with controller configured to selectively monitor the first local link in a set of local links;

wherein the monitor detects a broadband service request on the first local link, and in response, controls the switch to connect the first local link to the second port.

49. (Currently Amended) A method according to claim 1, wherein the ~~monitor~~ scanning device includes scan point matrix switches, and wherein the detector includes a signal processor and a controller, ~~wherein the controller is located in the line unit.~~

50. (Currently Amended) A method according to claim 18, wherein the ~~monitor~~ scanning device includes scan point matrix switches, and wherein the detector includes a signal processor and a controller, ~~wherein the controller is located in the line unit.~~

51. (Previously presented) A method according to claim 27, wherein the monitor includes scan point matrix switches, a signal processor and a controller, wherein the controller is located in the line unit.

52. (Currently Amended) A line unit as in claim 46, wherein the ~~monitor means switch~~ includes scan point matrix switches, the monitor means includes a signal processor, ~~and a controller,~~ and wherein the controller is located in the line unit.

53. (Currently Amended) A method comprising:



receiving, from a customer premises terminal via a local link to a line unit and telephone network switch in a switched telephone network, a request for a communication path to a destination;

establishing a communication path from said local link through a concentrator network in said line unit;

controlling a scanning device to selectively connect a signal detector to the local link a detector to said local link, wherein the scanning device and detector are associated with said line unit;

using said detector to identify a data sequence generated by said terminal;

using the signal detector to monitor a signal that includes said request;

determining based on said data sequence ~~said signal~~ that said request does not seek conversion in said line unit;

responsive to said determination, connecting said ~~terminal~~ communication path from said concentrator network through a portion of said line unit around a converter in said line unit to a wide band data switch connected to a data network; and

signaling a central processing unit (CPU) controlling said telephone network switch to effect an entry in a journal of said telephone network switch, and using said entry for billing for the communications path set up in response to said requesting step.

54. (Currently Amended) A method comprising:

receiving, from a customer premises terminal a local link to a line unit and telephone network switch in a switched telephone network, a request for a communication path to a destination;

controlling a scanning device to selectively connect a signal detector to the local link a detector to said local link, wherein the scanning device and detector are associated with said line unit;

using said detector to identify a data sequence generated by said terminal;

using the signal detector to monitor a signal that includes said request;

determining based on said data sequence ~~said signal~~ that said request does not seek conversion in said line unit; and

responsive to said determination, connecting said terminal through a portion of said line unit around a converter in said line unit to a wide band data switch connected to a data network, wherein said connecting step through a portion of said line unit around a converter therein to a wide band switch is a virtual hard wired connection.

55. (Previously presented) A method according to claim 54, wherein said connection to said wide band network is through an Asynchronous Transfer Mode (ATM) edge device.

56. (Previously presented) A method comprising:

receiving a signal via a local link from customer premises in a telecommunications network connected by said local link to a program controlled switch in said telecommunications network; wherein the program controlled switch is configured for scanning each of a set of local links; scanning said local link with the program controlled switch to provide monitoring of said signal;

making a determination, via a monitor, regarding a pre-established characteristic of said signal; and

responsive to said determination, solid state switching said signal to a digital signal processor and a wide band network edge device, wherein said solid state switching comprises cross-point switching, wherein said cross point switching is performed in a line unit in said telecommunications network, wherein said cross-point switching directs said signal away from a two-way digital/analog converter in said line unit having predetermined narrowband digital bitrate capabilities.

57. (Previously presented) A method according to claim 56, wherein said wide band network edge device is an Asynchronous Transfer Mode (ATM) edge device.

58. (Currently Amended) A method according to claim ~~56~~57, wherein said digital signal processing occurs in said edge device.

59. (Previously presented) A method comprising:  
receiving a signal via a local link from customer premises in a telecommunications network connected by said local link to a program controlled switch in said telecommunications network;  
wherein the program controlled switch is configured to scan each of a set of local links;  
scanning said local link to provide monitoring of said signal;  
making a determination, via a monitor, regarding a pre-established characteristic of said signal; and  
responsive to said determination, solid state switching said signal to a digital signal processor and a wide band network edge device, wherein said processor is separate from said wide band edge device, wherein said processor performing said digital signal processing is associated with a line unit through a portion of which said signal is conducted.

60. (Currently Amended) A method according to claim 59, wherein said line unit includes ~~said processor performing said digital signal processing comprises a part of said line unit.~~

61. (Previously presented) A method according to claim 59, wherein said digital signal processing is performed in an adaptive digital signal processor with a programmed controller providing coding and decoding functions adapted to a particular communication service requested by said signal and the physical level of signal protocol used over said local link from said customer premises.

62. (Previously presented) A line unit according to claim 48, wherein the monitor is configured to selectively monitor subsequent local links in a set of local links.